

CURRICULUM VITAE

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I. PERSONAL

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Current Appointment: Senior Scientist
National Oceanic and Atmospheric Administration
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II. HIGHER EDUCATION

Free University of Brussels, Belgium, Ph.D. Applied Sciences, 1997.
Free University of Brussels, Belgium, M.S., Civil Engineering, 1988.
Free University of Brussels, Belgium, B.S., Civil Engineering, 1986.

III. EXPERIENCE

Academic

2004-present, Research Physical Scientist, NOAA GFDL, Princeton, NJ
2003-2004, Project Scientist I, UCAR/NOAA GFDL, Princeton, NJ
2001-2003, Assistant Research Scientist, GEST/NASA GSFC, MD
1998-2001, Post doctoral Fellow at NASA GSFC, MD
1992-1997, Scientist visitor, National Center for Atmospheric Research, CO
1991-1992, Civil Engineer, Belgium Institute for Space Aeronomy, Belgium

Military

1989-1990, Royal Military Academy, Department of electromechanical engineering, Belgium

IV PUBLICATIONS

Journal Articles (peer reviewed): ISI Web of Science (05/2018): h-index=43, citations=11,417

1. Pu, B. and Ginoux, P. (2018). How reliable are CMIP5 models in simulating dust optical depth?, *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2018-242>.
2. Pu, B. and Ginoux, P. (2018) Climatic factors contributing to long-term variations in surface fine dust concentration in the United States, *Atmos. Chem. Phys.*, 18, 4201-4215, <https://doi.org/10.5194/acp-18-4201-2018>.
3. Schnell, J. L., Naik, V., Horowitz, L. W., Paulot, F., Mao, J., Ginoux, P., Zhao, M., and Ram, K. (2018). Exploring the relationship between surface PM_{2.5} and meteorology in Northern India, *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2018-24>.
4. Zhao, M., Golaz, J.-C., Held, I. M., Guo, H., Balaji, V., Benson, R., et al. (2018). The GFDL global atmosphere and land model AM4.0/LM4.0: 1. Simulation characteristics with prescribed SSTs. *Journal of Advances in Modeling Earth Systems*, 10, 691–734. <https://doi.org/10.1002/2017MS001208>.
5. Zhao, M., Golaz, J.-C., Held, I. M., Guo, H., Balaji, V., Benson, R., et al. (2018). The GFDL global atmosphere and land model AM4.0/LM4.0: 1. Simulation characteristics with prescribed SSTs. *Journal of Advances in Modeling Earth Systems*, 10, 691–734. <https://doi.org/10.1002/2017MS001208>.
6. Paulot, F., Paynter, D., Ginoux, P., Naik, V., and Horowitz, L. (2018), Changes in the aerosol direct radiative forcing from 2001 to 2015: observational constraints and regional mechanisms, *Atmos. Chem. Phys. Discuss.*.
7. Ginoux, P. (2017), Atmospheric chemistry: Warming or cooling dust, *Nature Geoscience*, 10(4), doi:10.1038/ngeo2923.
8. Ginoux, P. and A. Deroubaix (2017), Space Observations of Dust in East Asia, in *Air Pollution in Eastern Asia: An Integrated Perspective*, ISSI Scientific Report Series, vol 16, 365-383, Springer, Cham, doi:10.1007/9878-3-319-59489-7_17.
9. Kim, D., M. Chin, E. M. Kemp, Z. Tao, C. D. Peters-Lidard, and P. Ginoux (2017), Development of high-resolution dynamic dust source function – A case study with a strong dust storm in a regional model, *Atmos. Environ.*, 159, doi:10.1016/j.atmosenv.2017.03.045.
10. Ocko, I. B., and P. Ginoux (2017), Comparing multiple model-derived aerosol optical properties to collocated ground-based and satellite measurements, *Atm. Chem. Phys.*, 17(7), doi:10.5194/acp-17-4451-2017.
11. Paulot, F., D. J. Paynter, P. Ginoux, V. Naik, S. Whitburn, M. Van Damme, L. Clarisse, P.-F. Coheur, and L. W. Horowitz (2017), Gas-aerosol partitioning of ammonia in biomass burning plumes: Implications for the interpretation of spaceborne observations of ammonia and the radiative forcing of ammonium nitrate, *Geophys. Res. Lett.*, 44(15), doi:10.1002/2017GL074215.
12. Pu, B. and P. Ginoux (2017), Climatic factors contributing to long-term variations of fine dust concentration in the United States, *Atm. Chem. Phys.*, doi:10.5194/acp-2017-821.
13. Pu, B. and P. Ginoux (2017), Projection of American dustiness in the late 21st century due to climate change, *Scientific Reports*, 7, 5553, doi:10.1038/s41598-017-05431-9.
14. Evans, S., P. Ginoux, S. Malyshev, and E. Shevliakova (2016), Climate-vegetation interaction and amplification of Australian dust variability, *Geophys. Res. Lett.*, 43, 11,823–11,830, doi:[10.1002/2016GL071016](https://doi.org/10.1002/2016GL071016).
15. Pu, B. and Ginoux, P. (2016), The impact of the Pacific Decadal Oscillation on springtime dust activity in Syria, *Atmos. Chem. Phys.*, 16, 13431-13448, doi:10.5194/acp-16-13431-2016.
16. Ge, C., J. Wang, S. Carn, K. Yang, P. Ginoux, and N. Krotkov (2016), Satellite-based global volcanic SO₂ emissions and sulfate direct radiative forcing during 2005–2012, *J. Geophys. Res. Atmos.*, 121, 3446–3464, doi:[10.1002/2015JD023134](https://doi.org/10.1002/2015JD023134).

17. Baddock, M. C., P. Ginoux, J. E. Bullard, and T. E. Gill (2016), Do MODIS-defined dust sources have a geomorphological signature?, *Geophys. Res. Lett.*, 43, doi:10.1002/2015GL067327.
18. Paulot, F., P. Ginoux, W. F Cooke, L. J. Donner, S-M. Fan, M. Lin, J. Mao, V. Naik, and L. W Horowitz (2016), Sensitivity of nitrate aerosols to ammonia emissions and to nitrate chemistry: implications for present and future nitrate optical depth, *Atm. Chem. Phys.*, doi:10.5194/acp-16-1459-2016.
19. Guo, H., J-C Golaz, L. J. Donner, B. Wyman, M. Zhao, and P. Ginoux (2015), CLUBB as a unified cloud parameterization: opportunities and challenges, *Geophys. Res. Lett.*, 42(11), DOI:10.1002/2015GL063672.
20. Strong, J. D., G. A Vecchi, and P. Ginoux (2015), The Response of the Tropical Atlantic and West African Climate to Saharan Dust in a Fully Coupled GCM, *J. Climate*, 28(18), DOI:10.1175/JCLI-D-14-00797.1.
21. Zhao, M., J-C Golaz, I. M Held, V. Ramaswamy, S-J Lin, Y. Ming, P. Ginoux, B. Wyman, L. J Donner, D. J Paynter, and H. Guo, (2015), Uncertainty in model climate sensitivity traced to representations of cumulus precipitation microphysics, *J. Climate*, DOI:10.1175/JCLI-D-15-0191.1.
22. Guo, Huan, Jean-Christophe Golaz, Leo J. Donner, Paul Ginoux, Richard S. Hemler (2014), Multivariate Probability Density Functions with Dynamics in the GFDL Atmospheric General Circulation Model: Global Tests, *J. Climate*, 27, 2087–2108.
23. Kim, D., M. Chin, H. Bian, Q. Tan, M. E. Brown, T. Zheng, R. You, T. Diehl, P. A. Ginoux, and T. Kucsera (2013), The effect of the dynamic surface bareness on dust source function, emission, and distribution, *J. Geophys. Res.*, 118, doi:10.1029/2012JD017907.
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25. Fiore, et al., Global air quality and climate, *Chem. Soc. Rev.*, 41, 6663-6683, doi: 10.1039/C2CS35095E.
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27. Ginoux, P., L. Clarisse, C. Clerbaux, P.-F. Coheur, O. Dubovik, N. C. Hsu, and M. Van Damme 2012, Mixing of dust and NH₃ observed globally over anthropogenic dust sources, *Atm. Chem. Phys.*, 12, 7351-7363, doi:10.5194/acp-12-7351-2012.
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32. Miller, D J., K Sun, M A Zondlo, D Kanter, O Dubovik, E J Welton, D M Winkler, and P. Ginoux (2011), Assessing boreal forest fire smoke aerosol impacts on U.S. air quality: A case study using multiple data sets, *J. Geophys. Res.*, 116, D22209, doi:10.1029/2011JD016170.
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39. Ganguly, D., P. Ginoux, V. Ramaswamy, O. Dubovik, J. Welton, E. A. Reid, and B. N. Holben, 2009, Inferring the composition and concentration of aerosols by combining AERONET and MPLNET data: comparison with other measurements and utilization to evaluate GCM output, *J. Geophys. Res.*, doi:10.1029/2009JD011895.
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- minimizing the difference between a model and observations. *J. Geophys. Res.*, **111**, D06207, doi:10.1029/2005JD005791.
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86. Weaver C. J., P. Ginoux, N. C. Hsu, M-D Chou, and J. Joiner, 2002, Radiative forcing of Saharan dust: GOCART model simulations compared with ERBE data, *J. Atmos. Sciences*, 59(3), 736-747.
87. Ginoux P., M. Chin, I. Tegen, J. M. Prospero, B. Holben, O. Dubovik, and S-J. Lin, 2001, Sources and distributions of dust aerosols simulated with the GOCART model, *J. Geophys. Res.*, 106 (D17), 20,255-20,273.
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89. Delmas et al., Experiment for Regional Sources and Sinks of Oxidants (EXPRESSO): An overview, *J. Geophys. Res.*, 104, 30,609-30,624, 1999.
90. Hauglustaine D., A. S. Madronich, B. A. Ridley, S. J. Flocke, C. A. Cantrell, F. L. Eisele, R. E. Shetter, D. J. Tanner, P. Ginoux, and E. L. Atlas, 1999, Photochemistry and budget of ozone during the Mauna Loa Observatory Photochemistry Experiment (MLOPEX 2), *J. Geophys. Res.*, 104, 20,275-30,307.

Book Chapters

1. *Atmospheric Chemistry and Global Change*, Edited by G. P. Brasseur, J. J. Orlando and G. S. Tyndall, Oxford University Press, New York, 1999.
2. *Remote Sensing and Climate Modeling: Synergies and Limitations*, Edited by M. Beniston and M. M. Verstraete, Kluwer Academic Publishers, Netherlands, 2001.
3. *Emissions of Chemical Species and Aerosol into the Atmosphere*, Edited by C. Granier, P. Artaxo, and C. Reeves, Kluwer Academic Publishers, Netherlands, 2004.

Assessment Reports

1. Report of the Intergovernmental Panel on Climate Change (IPCC), Chapter 5. Aerosols, their direct and indirect effects, Cambridge University Press, 2001.
2. A report of findings and recommendations on the impacts of aviation on climate change, FAA, 2006.

Other publications

Ginoux, P., Development of a telescopic atmospheric chemistry transport model, and interpretation of the results of the MLOPEX field campaign, Free University of Brussels, 303 pp., 1997. (Ph. D. Thesis in French).

Baudouin, Y., and P. Ginoux, Techniques CAD/CAM, *Report MA513-22*, Royal Military School, Belgium, 1990.

Ginoux, P., Y. Baudoin, and E. Ponselet, Criteres de qualifications en vibrations de materiels electro-acoustiques, *Revue de l'Ecole Polytechnique* (Journal of the Royal Military School of Belgium, in French), 3, 4-14, 1989.

V. PROFESSIONAL

Funded proposals

- 2018-2023: NASA NNH12ZDA0060-EVI4 (Earth Venture Instrument-4): Earth Surface Mineral Dust Source Investigation (EMIT): PI: R. Green (JPL), Co-I: P. Ginoux
- 2016-2020: NASA NNH16ZDA001N-MAP: Using Radiation Measurements to Constrain the Anthropogenic Contribution to Dust Radiative Forcing and Its Climate Response, PI: R. Miller (NASA-GISS), Co-I: P. Ginoux
- 2016-2019: NASA NNH15ZDA001N-HMA: Quantifying the role of dust on precipitation, snow, and runoff in high mountain Asia: PI: S. Kapnick (NOAA-GFDL), Co-I: P. Ginoux
- 2015-2018: NASA NNH14ZDA001-ACMAP: Detection and attribution of dust sources to understand dust effects on climate and air quality, PI: P. Ginoux
- 2015-2016: NOAA R2O NGGPS: Implementation and testing of regional and global dust forecasting, PI: P. Ginoux
- 2013-2016: NASA NNH12ZD001N-MAP: Contribution to radiative forcing and climate by anthropogenic sources of soil dust aerosols, PI: R. Miller (NASA-GISS), Co-I: P. Ginoux
- 2013-2015: Princeton U. Health Grand challenges: Predictive models of meningitis risk in the African meningitis belt, PI: N. E. Basta (Princeton University), Co-PI: P. Ginoux
- 2012-2013: NASA GSFC, improve dust sources in GEOS-5
- 2007-2008: NASA GLORY Science team: Co-PI: P. Ginoux
- 2005-2007: NASA NRA NN-H-04-Z-YS-003-N: Understanding the Mechanisms and Effects of Ice Nucleation in Tropical Cyclone, PI: P. Ginoux
- 2001-2003: NASA NRA 00-OES-09: Variability of Aerosols Distribution and optical properties simulated by GOCART model using TOMS aerosol data and AERONET measurements, PI: P. Ginoux
- 2000-2001: NASA NRA 99-OES-04: A 3-D model analysis of satellite and ACE-Asia data, NASA, PI: M. Chin (NASA-GSFC), Co-I: P. Ginoux
- 2000-2001: NASA NRA 99-OES-04: The interactions between the troposphere and the stratosphere: The impact of climate change, PI: M. Schoeberl (NASA-GSFC), Co-I: P. Ginoux

Professional and Honorary Organizations

- Invited professor by the LISA (Paris, France): April 2015
- European Geophysical Union: 2014
- European Association of Geochemistry, 2013
- American Geophysical Union: 1997 to present
- TOMS satellite Science Team: 2001-2005
- GLORY Advisory Science Team: 2006-2007

Awards

- 2014, 2015, 2016, 2017 Highly Cited Researcher (Thomson Reuters)
- 2013 AGU Atmospheric Sciences Ascent award for sustained pioneering work on aerosols.
- 2012 US Department of Commerce Gold medal for Meritorious Federal Service
- 2007 DOI and NASA William T. Pecora award: shared as a member of TOMS Science team.
- 2005 US Department of Commerce Silver medal for Meritorious Federal Service
- 2005 NASA GSFC Journal citation award for Ginoux et al., *J. Geophys. Res.* 2001
- 2004 ESI Thompson citation for Fast Moving Front in Geosciences

Reviews

- Journals:** Aeolian Research, Atmospheric Physics and Chemistry, Atmospheric Research, Atmospheric Science Letters, Earth's Future, Geophysical Research Letters, IEEE JSTARS, IEEE TGRS, Journal of Advances in Modeling Earth Systems, Journal of Applied Meteorology, Journal of Atmospheric and Oceanic Technology, Journal of Climate, Journal of Climate Dynamics, Journal of Climatology, Journal of Environmental Engineering and Science, Journal of Geophysical Research, Journal of

Quantitative Spectroscopy and Radiative Transfer, Monthly Weather Review, Nature, Proceedings of the National Academy of Sciences, Quarterly Journal of the Royal Meteorological Society, Remote Sensing of Environment, Tellus, Urban Climate, Weather Forecasting

Research proposals:	USA: DOE, NASA, NOAA, NSF Austria: Austrian Science Fund Binational (Israel-US) Science Foundation Canada: National Research Council France: French National Research Agency Hong Kong: Research Grants Council Israel: National Science Foundation Saudi Arabia: King Fahd University Switzerland: ETH Zurich UK: Natural Environment Research Council
Panel review:	LISA (Creteil-Paris, France): lab review, 2013 APS-2 satellite: satellite science mission review 2011 DOE Research proposals reviews: 2011, 2014 Laboratoire d'Optique Atmosphérique (Lille, France): lab review, 2008 NOAA NWS: dust forecasting review, 2008 IPCC WG1 4AR (US Government review): 2006 NASA research proposals reviews: 2005, 2006, 2010 ESSP3 (renamed later CALIPSO) Lidar Algorithms: 2001

Service to profession:

WMO SDS-WAS Regional (Americas node) Steering Group
NOAA Government monitor of aerosol modeling, 2015-present
NOAA NGGPS Aerosols and Atmospheric Composition team, 2015-present
Scientific steering committee, 8th International workshop on Dust, Lisbon, Portugal, 2015-2016
GEWEX report on Aerosols 2008-present
Organizing committee member, 8th International AeroCom workshop, Princeton, NJ, 2009
Convener of a session at AGU Fall meeting, San Francisco, CA, 2003

Invited Talks

ICAR X (keynote lecture, Bordeaux, France, 2018), Dust Workshop IX (keynote lecture, Tenerife, Canary Island 2018), EGU (Vienna, Austria, 2018), AEROCOM XVI (Helsinki, Finland), Goldschmidt Conference (Paris, France, 2017), NASA HIMAT science team meeting (Juneau, AK, 2017), Barcelona Supercomputing Center (Barcelona, Spain, 2017), AEROCOM-XV (Beijing, China, 2016), 8th Dust Workshop (Lisbon, Portugal, 2016), Fall AGU (San Francisco, 2015), Weizmann Institute (Rehovot, Israel, 2015), BatSheva de Rothschild Seminar on Atmospheric dust, dust deposits, and soils in deserts and the desert fringe (Jerusalem and Negev desert, Israel, 2015), AEROCOM-XIV (Frascati, Italy, 2015), Laboratoire Interuniversitaire des Systèmes Atmosphériques (Paris, France, 2015), Conference on Airborne dust, climate change, and human health (University of Miami, FL, 2015), Fall AGU (San Francisco, CA, 2014), University of Nebraska-Lincoln (Lincoln, NE, 2014), Columbia University (NYC, NY, 2014), AEROCOM-XII workshop (Hamburg, Germany, 2013), Goldschmidt conference (keynote address, Florence, Italy, 2013), Loughborough University (Loughborough, England, 2013), Sultan Qaboos University (Muscat, Sultanate of Oman, 2013), King Abdullah University of Science and Technology (Jeddah, Kingdom of Saudi Arabia, 2013), Stony Brook University (Long Island, NY, 2013), Fall AGU (San Francisco, CA, 2012), Workshop on Dust, Climate and Health in Sub-Saharan Africa (Columbia University, NY, 2012), Fall AGU (San Francisco, CA, 2011), Workshop on Observations and modeling of aerosol and clouds properties for climate studies (Paris, France, 2011), Belgian Institute for Space Aeronomy (Brussels, Belgium, 2011), AeroCenter (NASA GSFC, MD, 2011), Lamont-Doherty Dust Records meeting (Palisades, NY,

2010), DOE Atmospheric Science Research (keynote address, Bethesda, MD, 2010), US emission initiative (Boulder, CO, 2010), Third International dust workshop (Leipzig, Germany, 2008), IPSL/CEA (Paris, France, 2008), Yoram Kaufman symposium (MD, 2007), NASA GSFC (MD, 2007), Laboratoire d'Optique Atmosphérique (Lille, France, 2006), GEIA-ACCENT workshop (Paris, France, 2006), AEROCOM-V workshop (VA, 2006), Rutgers University (NJ, 2006), DOE Atmospheric Sciences Program (Washington DC, 2006), Yale University (New Haven, CT, 2005), NASA GISS (NYC, NY, 2005), GEIA Workshop on emission of atmospheric tracers (Paris, France, 2005), Columbia University (NYC, NY, 2004), US-India State departments initiative on climate research (New Delhi, India, 2004), AGU fall meeting (San Francisco, CA, 2004), Second International Workshop on Mineral dust (Paris, France, 2003), ICAR-5 (Lubbock, TX, 2002), IAMAS (Innsbruck, Austria, 2001), AMS annual meeting (Albuquerque, NM, 2001), Miami University (Miami, FL, 2001), First International Workshop on mineral dust (Boulder, CO, 1999), Second Gentner Symposium on Geosciences (Nazareth, Israel, 1999).

Contributed Talks

4th International Symposium on the Effects of Climate Change on the World's Ocean 2018 (1), EGU 2018 (1), Fall AGU 2017 (3), AMS Annual meeting 2017 (3), Fall AGU 2016 (4), AMS Annual meeting 2016 (1), Fall AGU 2015 (3), Spring EGU 2015 (1), Fall AGU 2014 (5), Fall AGU 2013 (1), Fall AGU 2012 (2), Fall AGU 2009 (1), Fall AGU 2008 (2), IGAC 2008 (2), Aerocom workshops (2010, 2009, 2007, 2006, 2004), Fall AGU 2007 (2), Fall AGU 2003 (6), Fall AGU 2003 (session convener), Fall AGU 2002 (2), IAMAS 2001 (3), Spring AGU 2000 (3), Fall AGU 2000 (3), Spring AGU 1999 (1), Fall AGU 1998 (1), Fall AGU 1997 (1), IUGG 1995 (1), IGAC 1994 (1)

VI. TEACHING

Lectures

Spring 2016: Guest lecturer EESC G9910 Columbia University: US Dust project
Fall 2011: Princeton University CEE593/AOS593: Aerosol Observations & Modeling
Spring 2010: Princeton University CEE599B: Aerosol Observations & Modeling
Spring 2008: Princeton University AOS 580: Aerosol, Cloud and Climate Change
Summer 2007: ACCENT Summer School (Ile d'Oleron, France): Aerosols emission
2003-2007: Princeton University AOS-527: substituted 2-6 lectures a class

Supervision

Summer interns:

Eliza Dawson NOAA Hollings, 2016
Erik Gould NOAA Hollings, 2011
Arielle Alpert NOAA Hollings, 2011

Undergraduate student:

Dmitri Garbuzov (CS, Princeton University): summers from 2007 to 2009

Graduate Student co-supervision or committee member:

Geeta Persad (AOS, Princeton University): 2016 PhD Graduation
Jeffrey Strong (AOS, Princeton University): 2016 PhD Graduation
Aaron Adams (RSMAS, University of Miami): 2012 to 2015
Kang Sun (CEE, Princeton University): 2015 PhD Graduation
David Miller (CEE, Princeton University): 2014 PhD Graduation
Ilissa Ocko (AOS, Princeton University): 2013 PhD Graduation
Yan Zhang (CEE, Princeton University): 2010 PhD Graduation
Fuyu Li (AOS, Princeton University): 2010 PhD Graduation
Cynthia Randles (AOS, Princeton University): 2007 PhD Graduation

Post-doctoral:

Veronica Chan (AOS, Princeton University): 2017-present
Bing Pu (AOS, Princeton University): 2015-present
Stuart Evans (AOS, Princeton University): 2015 - 2017
Juliette Paireau (EEB, Princeton University): 2015 -2016
Adrien Deroubaix (AOS, Princeton University): 2015- 2016
Dilip Ganguli (AOS, Princeton University): 2007 – 2010
Brian Maggi (AOS, Princeton University): 2007 – 2010
Shekar Reddy (AOS, Princeton University): 2004 - 2006